

PATENT COOPERATION TREATY
PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
 (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference JP920030200	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2004/016296	International filing date (day/month/year) 04.11.2004	Priority date (day/month/year) 06.11.2003
International Patent Classification (IPC) or national classification and IPC G11C11/407		
Applicant INTERNATIONAL BUSINESS MACHINES CORPORATION		

<ol style="list-style-type: none"> 1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of 5 sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: <ol style="list-style-type: none"> a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of _____ sheets, as follows: <table border="0" style="width: 100%;"> <tr> <td style="width: 15px;"><input type="checkbox"/></td> <td style="width: 85%;">sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</td> </tr> <tr> <td><input type="checkbox"/></td> <td>sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</td> </tr> </table> b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). 	<input type="checkbox"/>	sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).	<input type="checkbox"/>	sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.												
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<ol style="list-style-type: none"> 4. This report contains indications relating to the following items: <table border="0" style="width: 100%;"> <tr> <td style="width: 15px;"><input checked="" type="checkbox"/></td> <td style="width: 85%;">Box No. I Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII Certain observations on the international application</td> </tr> </table> 	<input checked="" type="checkbox"/>	Box No. I Basis of the report	<input type="checkbox"/>	Box No. II Priority	<input type="checkbox"/>	Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI Certain documents cited	<input type="checkbox"/>	Box No. VII Certain defects in the international application	<input type="checkbox"/>	Box No. VIII Certain observations on the international application
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Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/JP2004/016296

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - This report is based on translations from the original language into the following which is the language of a translation furnished for the purposes of:
 - international search (Rule 12.3 and 23.1(b))
 - publication of the international application (Rule 12.4)
 - international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):
 - the international application as originally filed/furnished
 - the description:

pages _____ as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____
 - the claims:

nos. _____ as originally filed/furnished

nos.* _____ as amended (together with any statement) under Article 19

nos.* _____ received by this Authority on _____

nos.* _____ received by this Authority on _____
 - the drawings:

sheets _____ as originally filed/furnished

sheets* _____ received by this Authority on _____

sheets* _____ received by this Authority on _____
 - a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. The amendments have resulted in the cancellation of:
 - the description, pages _____
 - the claims, nos. _____
 - the drawings, sheets/figs _____
 - the sequence listing (*specify*): _____
 - any table(s) related to sequence listing (*specify*): _____
4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - the description, pages _____
 - the claims, nos. _____
 - the drawings, sheets/figs _____
 - the sequence listing (*specify*): _____
 - any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	
1. Statement		
Novelty (N)	Claims	<u>1 - 6</u> YES Claims _____ NO
Inventive step (IS)	Claims	_____ YES Claims <u>1 - 6</u> NO
Industrial applicability (IA)	Claims	<u>1 - 6</u> YES Claims _____ NO
2. Citations and explanations (Rule 70.7)		
<p>Document 1: JP 2001-202780 A (NEC Corporation), 27 July 2001, paragraphs [0013] to [0015]; fig. 4 and 8 & US 2001/0008282 A1 & KR 2001/100765 A</p> <p>Document 2: JP 2000-260181 A (Toshiba Corporation), 22 September 2000, entire text; all drawings & US 6165301 A & EP 1035548 A1 & KR 2000/062766 A</p> <p>Document 3: JP 2000-195253 A (International Business Machines Corporation), 14 July 2000, entire text; all drawings & US 6252794 B1 & KR 2000/047637 A</p> <p>Document 4: JP 8-221978 A (Hitachi, Ltd.), 30 August 1996, entire text; all drawings (Family: none)</p>		
<p>[Claims 1 and 4]</p> <p>The inventions set forth in claims 1 and 4 do not involve an inventive step in the light of documents 1, 2 and 3 cited in the international search report.</p> <p>Document 1 sets forth a multi-bit pre-fetch type semiconductor storage device, provided with a means of controlling a column decoder in such a manner that a</p>		

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

plurality of column selection lines YSW1 and YSW2 are driven in sequence during activation of a sense amplifier.

The plurality of column selection lines YSW1 and YSW2 in document 1 are provided in a manner so as to correspond to a plurality of memory cell arrays, and although not provided in a manner so as to correspond to groups into which a plurality of switches have been divided, it is a known technique, as set forth in document 2, for example, to provide a plurality of bit switches divided up into a plurality of groups between a plurality of latch circuits and a plurality of bit line pairs in a multi-bit pre-fetch semiconductor storage device, and it would be easy for a person skilled in the art to apply this known technique to the invention set forth in document 1 to provide the plurality of column selection lines YSW1 and YSW2 in such a manner as to correspond to groups into which a plurality of switches have been divided.

Moreover, a multi-bit pre-fetch type semiconductor storage device, wherein by activating only a sense amplifier with a burst length, burst length is increased without increasing current consumption, is known. See document 3 if necessary.

[Claims 2 and 5]

The inventions set forth in claims 2 and 5 do not involve an inventive step in the light of documents 1, 2 and 3 cited in the international search report.

As disclosed in document 3, for example, it is a known technique to divide a memory cell array into a plurality of blocks, and to selectively activate the

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sense amplifier within a selected block.

[Claims 3 and 6]

The inventions set forth in claims 3 and 6 do not involve an inventive step in the light of documents 1, 2, 3 and 4 cited in the international search report.

As set forth in document 4, for example, it is a known technique to drive a column selection line in an asynchronous manner with an external clock, and it would not be particularly difficult for a person skilled in the art to drive a plurality of column selection lines in an asynchronous manner with an external clock.